



Breakout Session Report

“During the 2003 SARS outbreak, the Medical Officer of Health for Toronto reported that the public health department relied on a large wall covered with sticky notes, and some public health officials spent more than four hours per day on the phone. This perpetual passing of information is not effective...”

– David Mowat, June 21, 2006

As human cases of avian influenza increase, variations in tracking, identification, and communication mechanisms across national borders become more evident, thus making rapid, effective response very difficult. In light of such variation, the speed, organization, and volumes of data that are necessary to monitor, prepare for, and react to a pandemic of any kind will necessarily require the creative use of information technology (IT).



Chengwen Wu & Ross Anthony

IT not only facilitates efficient, real-time communication across and within borders, but it also enables individuals, businesses, and governments alike to streamline an overwhelming amount of data and identify and track anomalies. IT will also help to fill gaps during a pandemic. For example, if people

do not want to leave their homes, electronic resources can provide valuable updates or instructions on treatment without requiring physical contact. As a result, information can still spread between physically isolated environments.

During an outbreak, governments alone will not likely be able to reach and protect all of their populations. Coordination between sectors and countries is necessary. Even if an avian flu pandemic lies dormant for years or never materializes, effective preparations such as networked communications and information-sharing systems will still provide businesses and governments with robust infrastructures for dealing with a disaster of any kind.

In response to overwhelming concern about avian flu and other pandemic threats, the Pacific Health Summit created its Emerging Infections/Pandemics Workgroup, which launched its first publication *An Avian Flu Pandemic: What Would It Mean, and What Can*

We Do? in May 2006. A month earlier, the Summit’s Health Information Technology and Policy (HIT) Workgroup convened in Tokyo to identify the needs of healthcare systems around the globe and pinpoint areas where technologies can help address current challenges. Disease tracking and surveillance was a key part of these discussions and subsequent *HIT Briefing Book*. Acknowledging the overlap between the work of these groups, the 2006 Pacific Health Summit drew participants together to discuss how IT could facilitate preparedness efforts during a breakout session on June 21.

Carol Kovac, General Manager of Healthcare and Life Sciences at IBM, opened the session by reporting on progress in pandemic preparedness since the inaugural Summit in 2005. “Last year we heard from people ahead of the curve, who understood the implications of a pandemic. A year later, we find a heightened interest in, and awareness of, avian flu and a potential pandemic,” she said, lauding the numerous plans many companies and governments have developed. Kovac also highlighted the use of models and simulations to help create realistic expectations and identify unanticipated consequences of our plans.

“One might consider SARS the first wake-up call about our state of preparedness,” she continued. “Other incidents like the 2004 tsunami, as well as recent hurricanes and earthquakes have really heightened the need to plan ahead and have in place effective, well-deployed systems. There will be many opportunities to use these kinds of preparedness systems in response to other emergencies.”

In spite of recent progress however, gaps still exist between planning stages and actual pandemic preparedness. In tackling these gaps, **Ann Marie Kimball**, Director of the APEC Emerging Infections Network and Professor at the University of Washington School of Public Health and Community Medicine, stressed that pandemic flu should be considered a global challenge amplified by trade and travel, and not only a challenge for the Asia-Pacific region, where the disease is emerging.



Risaburo Nezu

Risaburo Nezu, Senior Managing Director of the Fujitsu Research Institute, noted that policy and communication

gaps in health systems illuminated by the threat of a pandemic are not new. However, now that the threat of a new disease looms, more attention is focused on the need for more comprehensive communication networks and improved public health infrastructure. And more attention on these areas comes at a time when innovations in IT have vastly expanded our capabilities to prevent, detect, and treat disease earlier and more effectively than ever before.



"We need good plans that work. A bad plan could be more detrimental than having no plan at all."

- Ross Anthony

Key exemplars include Taiwan's Smart Card, which provides basic information about an individual's health and former care through an electronic chip placed

into a small card patients carry with them. This basic tool not only facilitates day-to-day care but it also enables hospitals and clinics to monitor and keep track of disease clusters or irregularities and report them to officials in real-time. Additionally, electronic health records, biothermal RFID devices, surveillance systems, and thermal cameras are additional examples of specific technologies which make a direct contribution to pandemic preparedness as well as better health infrastructure in general. Unfortunately, just as our needs have been constant, so have the barriers to achieving those needs. Privacy and security issues, as well as standards and interoperability, continue to be challenges in connecting systems and capabilities across the globe.

Security is another critical issue that pandemic preparedness efforts must address. **Ross Anthony**, Director of Global Health at the RAND Corporation, discussed the critical importance of an effective global governance system to help regulate drug and vaccine supply and distribution as well as disease surveillance, tracking, and reporting. With healthcare increasingly becoming a global market good, he urged participants to consider how a pandemic will affect the way governments think about global cooperation/governance and handle issues of sovereignty. "Until that happens," he cautioned, "we can discuss niceties, but we will not be able to work with certainty."

Despite the WHO's International Health Regulations (early instruments for international public health governance updated by the World Health Assembly in 2005), a more substantive framework for the global governance of public health that increases capacity for global political decision-making—perhaps through enhanced WHO authority—is still necessary. For example, if one country without a stockpile of anti-virals experiences a disease outbreak, will another country relinquish its own stock of drugs in order to stave off a pandemic in another part of the world? Or will politics require the latter country to maintain its supply? Will other governments have any input?

Chengwen Wu, President Emeritus of the National Health Research Institutes, notes that issues of drug availability are further complicated by patent laws for anti-viral production during shortages, which need to be addressed.

While sophisticated technologies exist to broaden preparedness and prevention efforts, sometimes the simplest forms of technology are the best solutions. **David Mowat**, Deputy Chief Public Health Officer for Canada's Public Health Agency, recalled how hundreds of physicians in the affected area had neither access to email nor fax during the SARS epidemic in 2003. Had this simple technology been more widespread, communication between patients, doctors, and officials would have been much easier and faster. "Information policy without access to data is of no use," added **Elizabeth Halloran**, full member and professor of biostatistics at the Fred Hutchinson Cancer Research Center.

Meeting basic communication needs does not necessarily require an overhaul of the system or huge budgetary allotments. Basic internet and fax technology could also enhance public health officials' emergency communication with providers and with each other. And more sophisticated surveillance software could help streamline data tracking and response efforts at the higher levels with much more efficiency than a wall covered in Post-It notes.

Mowat also suggested that secure "team-ware" or other technology could help to achieve coordinated decisions at the policy level and the frontlines as public health workers manage cases and quarantines under their jurisdictions.

At the outset of any pandemic disease outbreak, effective collaborative efforts to undertake the movement of people and goods to containment areas will be both necessary and extremely complex, raising many privacy and security issues, as well as logistical and tactical questions. Surge capacity is vital yet questions remain about who will facilitate such movement across and within borders. Many countries are just now addressing cross-sector and cross-border issues about emergency operations and stand by facilities and resources.

Linda McAllister, Director of Technology Management at Roche Diagnostics, also emphasized the role of diagnostics in pandemic preparedness. She suggested that technology can help create regional systems for development and deployment of stockpiles by developing reliable data sources and providing virtual meeting places with standard high-quality information. Such systems that facilitate the consolidation and dispersal of essential public health information would vastly improve pandemic preparedness worldwide. While trade and travel have brought us physically closer to one another, they have also created a world in which disease knows no borders, where all of us are responsible for maintaining health and preventing infection.

Information technology can link decision-makers in real-time regardless of location to discuss complex issues before they become emergencies, as well as increase production capacity and coordination in the event of a crisis. Additionally, communication technologies can facilitate training when human resources are unavailable or too costly.

To learn more about the Pacific Health Summit, please visit www.pacifichealthsummit.org, or email ctopal@nbr.org.